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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/760,584	01/16/2001	Hiroaki Miyoshi	P/2054-130	4301

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07/13/2004

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EXAMINER

LAM, DANIEL K

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/760,584

Applicant(s)

MIYOSHI, HIROAKI

Examiner

Daniel K Lam

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 4.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract is too long. It should be generally limited to a single paragraph within the range of **50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. Correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claim 1** is rejected under 35 U.S.C. 102 (b) as being anticipated by U. S. Pat. No. 5,295,140 issued to Crisler et al (hereinafter Crisler).

Regarding **claim 1**, Crisler disclose a method for multi-purpose utilization of resources in a communication having TDM slot 240 in the inbound direction and TDM slot 250 in the outbound direction that are used for periodic communications between the base station 120 and communication units 101 (communication is periodically processing time band between communication terminals and the data bus control apparatus). See figures 1, 2B, and 2C, and col. 3, lines 41-43, and col. 4, lines 8-14. Furthermore, independently, the time slots in the inbound channel are subdivided, on a non-periodic basis, into two sub slots

that may also be used by the communications units 101 (a non-periodical processing time band during which communication is non-periodically conducted between communication terminals and data bus control apparatus). See col. 4, lines 15-18. The base station uses a length indicator within a reservation packet to determine the size of a packet that a modem wishes to send (data transmission is conducted at a variable length packet unit during said non-periodical processing time band). See col. 6, lines 2-10.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 5,295, 140 issued to Crisler et al (hereinafter Crisler) in view of U. S. Pat. No. 5,297,144 issued to Gilbert et al (hereinafter Gilbert).

Regarding **claim 2**, Crisler discloses the limitations discussed in claim 1 of having a periodical and a non-periodic processing time bands between the communication terminals and the data bus control apparatus are independently provided, and data transmission is conducted at a variable length packet unit during the non-periodical processing time band. Furthermore, he discloses the TDM frame is time divided into

TDM slots (see fig. 2A, and col. 5, lines 35-39). However, he does not disclose that there is a collection of communication requests (polling) during the non-periodical processing time band from the communication terminal.

Gilbert discloses a reservation-based polling protocol whereby a central station uses a two stages approach having a reservation stage and a polling stage. See col. 3, lines 26-41.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to develop a method having a periodical and a non-periodic processing time bands between the communication terminals and the data bus control apparatus are independently provided, and data transmission is conducted at a variable length packet unit during the non-periodical processing time band, and a collection of communication requests (polling) during the non-periodical processing time band from the communication terminal is time divisionally conducted for a key reason. By providing a periodical band, a communication terminal will have at least a dedicated bandwidth for transmission of its data. By having a non-periodical band in which polling is used will give a communication terminal additional bandwidth for transmission of its data. As a result of combining these two bands, the need of increasing utilization of communication resources can be achieved as taught by Crisler. See col. 3, lines 6-13.

Regarding **claims 3, 4 and 5**, in addition to disclose the limitations in claims 1 and 2 discussed earlier, Gilbert further discloses the communication unit (communication terminals) sends its reservation request RR with a particular priority set in the control field of its reservation request during the reservation request period. The base station

polls the active stations according to the priority in the reservation request and schedules data transmission during the polled data transfer period (Conducting communication with priority during each non-periodical processing time band are previously determined and a schedule is made out; claims 3 and 4. Conducting communication with priority do not exist, the non-periodical time band is allocated to communication with other communication terminals; claim 5). See fig. 3, and col. 8, lines 39-49.

Regarding **claim 6**, in addition to disclose the limitations in claim 1 discussed earlier, Gilbert further discloses the length of data packet in bytes is specified in the Length LGN 30 field. Hence, on the average, the communication request is related to LGN (communication requests from the communication terminals are averaged by a time period during which transmission of a plurality of packets is conducted). See col. 6, lines 34-36.

Regarding **claim 7**, Crisler and Gilbert disclose a bus control method comprising:

- Independently providing a periodical and a non-periodical processing time bands between the communication terminals and the data bus control apparatus between the communication terminals and the data bus control apparatus; and allocating an allowable band in said non-periodical processing time band to each communication terminal. See Crisler, figures 1, 2B, and 2C, and col. 3, lines 41-43, and col. 4, lines 8-18.
- Time-dividing (See Crisler, fig. 2A, TDM slot, and col. 5, lines 35-39) collection of communication requests (polling) to each communication terminal during the non-periodical processing time band; previously determining communication terminals for

conducting communication with priority during each non-periodical processing time band and making out a schedule; conducting collection of communication requests (polling) to communication terminals for conducting communication with priority during said non-periodical processing time band, based on said schedule; See Gilbert, fig. 3, and col. 8, lines 39-49.

- In case that the communication requests from the communication terminals exist, allowing transmission if a data content to be transmitted, which is averaged by a time period is below or equal to the allocated allowable band, and suppressing transmission if it is above or equal to said allocated allowable band; and transmitting one variable length packet in one non-periodical processing time band during which transmission is allowed. See Gilbert, col. 6, lines 34-36.

Regarding **claim 8**, in addition to disclose the limitations in claim 7 discussed earlier, Gilbert further discloses the length of data packet in bytes is specified in the Length LGN 30 field. Hence, the transmission allowance is determined by LGN (determination of transmission allowance is determined based on $L(n)+L(n+1)+\dots+L(n+m)$ is equal to or less than B_{walloc} times T_{mP}). See col. 6, lines 34-36.

Regarding **claims 9 and 10**, in addition to disclose the limitations in claims 7 and 8 discussed earlier, Gilbert further discloses allocating the non-periodical time band to communication with other communication terminals in case that communication requests from the communication terminals for conducting communication with priority during said non-periodical processing time band do not exist. Also fig. 3, and col. 8, lines 39-49.

Regarding **claim 11**, Gilbert discloses the block diagram of the central station comprising:

- A schedule table in which numbers of communication terminals for conducting communication with priority are described. See fig. 3, references 60-66 polled data transfer sequence, fig. 10, reference 140 memory, and col. 14, lines 8-9.
- Means for conducting collection of communication requests (polling) to the communication terminals having the numbers which are described in the schedule table. See fig. 10, transceiver 16, communication processor 134, and network controller 130.
- Control means for, in case that the communication requests from the communication terminals exist, allowing transmission if a data content to be transmitted, which is averaged by a time period during which transmission of packets is conducted, is below or equal to an allowable band allocated to the communication terminals, and suppressing transmission if it is above or equal to the allocated allowable band. See fig. 10, communication processor 134, and network controller 130.
- Means for allowing transmission of one variable length packet. See fig. 10, communication processor 134.

Regarding **claim 12**, in addition to disclose the limitations in claim 11 discussed earlier, Gilbert further discloses the length of data packet in bytes is specified in the Length LGN 30 field. Hence, the transmission allowance is determined by LGN (determination of transmission allowance is determined based on $L(n)+L(n+1)+\dots+L(n+m)$ is equal to or less than B_{walloc} times T_{mP}). See col. 6, lines 34-36.

Regarding **claim 13**, in addition to disclose the limitations in claim 11 discussed earlier, Gilbert further discloses the he base station polls the active stations according to the priority in the reservation request and schedules data transmission during the polled data transfer period (Conducting communication with priority do not exist, the non-periodical time band is allocated to communication with other communication terminals). See fig. 3, and col. 8, lines 39-49.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703) 305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status Information for unpublished applications is available through Private PAIR


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only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the

Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DKL *dlh*
July 6, 2004


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 7/6/04